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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,622	12/31/2001	Dennis W. Vance	18590-06192	2497

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EXAMINER
PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,622	VANCE ET AL.	
	Examiner	Art Unit	
	Joshua L Pritchett	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 reads exactly the same as the limitation regarding the second layer of claim 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Vance (US 5,781,344).

Regarding claim 1, Vance discloses a light filter comprising a first layer of substantially opaque material (16) including front and back surfaces. Vance further discloses a plurality of light transmissive beads (14) disposed in a single-layer array within the first layer of opaque

material with first portions of the beads protruding through the front surface to receive incident light and remaining portions of the beads not disposed with the first layer penetrating through the back surface of the first layer of opaque material to form light transmissive apertures therethrough (Fig. 5A). Vance further teaches a second layer of light-dispersing material (12) having asymmetrical dispersion characteristics along orthogonal axes disposed relative to the beads and the first layer to disperse light incident thereon.

Regarding claim 2, Vance discloses the second layer disposed to receive light emanating from the apertures (Fig. 5A).

Regarding claim 3, Vance discloses a layer interposed between the incident light the front surface of the first layer (Fig. 6A).

Regarding claim 4, Vance discloses a layer of transparent lenses overlaying the first portion of beads having a radius R protruding through the front surface of the first layer, and the layer of lenses including curved surfaces disposed to receive incident light and overlaying the first portion of the beads at selected radii of curvature to the radius R of the beads (Fig. 10B).

Regarding claims 11 and 12, Vance discloses a first layer of substantially opaque material (82). Vance further discloses a plurality of light-transmissive beads (14) disposed in the first layer in a single layer array. Vance further discloses a transparent support layer to receive light emanating from the beads (12). Vance further discloses a second layer (20) interposed between the back surface of the first layer and the support layer with the remaining portions of the beads protruding into the second layer (Fig. 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vance in view of Moshrefzadeh (US 6,417,966).

Regarding claims 5 and 6, Vance teaches the invention as claimed but lacks reference to the second layer having prismatic lens. Moshrefzadeh teaches a layer of prismatic lenses oriented along orthogonal axes in a light dispersion layer (col. 10 lines 59-60). Moshrefzadeh teaches the surfaces having sloping surfaces (Fig. 19) and surfaces normal to the incident light (Fig. 12, 1208). Moshrefzadeh teaches enhanced light transmission within one output angle (Fig. 6A). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the dispersion layer (second layer) of Vance be the prismatic layer taught by Moshrefzadeh for the purpose of maximizing the gain at a specific viewing angle.

Regarding claim 7, Vance teaches the invention as claimed but lacks reference to the use of a prismatic layer. Moshrefzadeh teaches a prismatic layer with sloping surfaces having multiple facets at different angles (Fig. 19). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the dispersion layer (second layer) of

Vance be the prismatic layer taught by Moshrefzadeh for the purpose of maximizing the gain at a specific viewing angle.

Regarding claim 8, Vance teaches the invention as claimed but lacks reference to the use of a prismatic layer. Moshrefzadeh teaches a prismatic layer with the sloping surfaces adjacent the normal surfaces having different angles (Fig. 19). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the dispersion layer (second layer) of Vance be the prismatic layer taught by Moshrefzadeh for the purpose of maximizing the gain at a specific viewing angle.

Regarding claims 9 and 10, Vance teaches the invention as claimed but lacks reference to the use of a prismatic layer. Moshrefzadeh teaches the use of a prismatic layer with a greater angle along the horizontal axis than the vertical axis (Fig. 12). Moshrefzadeh also teaches the prismatic layer can be a film (col. 10 lines 4-5). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the dispersion layer (second layer) of Vance be the prismatic layer taught by Moshrefzadeh for the purpose of maximizing the gain at a specific viewing angle.

Claims 13-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Vance in view of DiLoreto (US 6,076,933).

Vance teaches the invention as claimed but lacks reference to the thickness of the second layer in relation to the radius of the beads. DiLoreto teaches the thickness of a second layer in a light filter between 0.3R and 1.0R, where R is the radius of the beads. 0.3R in the broadest reasonable interpretation is "about ten percent" of the radius of the bead. It would have been

obvious to a person of ordinary skill in the art at the time the invention was made to have the thickness of the second layer of Vance meet the dimensional restrictions of DiLoreto for the purpose of minimizing the gain loss of the filter.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vance.

Vance teaches the use of a resin (62) as a layer in the light filter. The resin has a refractive index that may be lower than the beads (col. 7 lines 40-43). One of ordinary skill in the art would recognize that the resin (62) could be used in place of the material of the second layer (20) for the purpose of adjusting the gain of the light filter to the desired value.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vance (US 5,563,738) teaches a light filter using transmissive beads.

Staehle (US 2,378,252) teaches a light filter using transmissive beads.

Suzuki (JP 05-216121) teaches a light filter using transmissive beads.

Murata (JP 03-002855) teaches a light filter using transmissive beads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7917. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP
February 12, 2003

James Phan
Primary Examiner